

## Claims

What is claimed is:

1 (Currently amended) A [method of constructing a] high strength stringed musical instrument neck, [assembly, and central body portion having increased stiffness and stability, and having a headstock portion, and a central body portion, said neck assembly comprising; a sandwich integral structure made from graphite / carbon fiber, wood, and epoxy resins which extends completely along the length of the neck assembly into the headstock and body portions, said structure being of sufficient stiffness and strength to bear the load imposed on the assembly by a plurality of strings, and said structure comprising; a core] which is constructed so that the tension from a plurality of strings acting upon it in singular plane is controlled and redirected by a monocoque outer structure as an opposing force to the tension imposed by the plurality of strings, and improved method of construction comprising

a length of hardwood shaped as the instruments neck; and [having a length extending completely along the neck and body assembly and headstock portion, a compression spar of unidirectional and bi-directional graphite in epoxy resins, a tension spar of unidirectional graphite cast in epoxy resins, an outer skin truss of bi-directional carbon fiber cloth at 45 ° to the longitudinal axis]

two separate strengthening beams made from graphite and epoxy resins and, adhesively securing said beams to and within the wood; and [a string orbit relief control mechanism, and coated with a hard translucent ultra-violet protective finish.]

one external strengthening shell made from carbon cloth and epoxy resins, and adhesively securing said shell to the wood and both beams inclusive; and

a fingerboard adhesively secured, and

a two way truss rod assembly made from stainless steel being adjustable to facilitate up bow and back bow relative to the playing surface.

2. (Currently amended) A high strength stringed musical instrument neck as recited in claim one wherein [The structure is designed so that load vectors acting upon it in a singular plain are controlled] both strengthening beams are made from graphite in epoxy resins and one of which is in the form of a flat plate and [redistributed into the said structure as opposing force to] the other is in the form of a rectangular rod and each having a generally flat bottom and top surface. [original loads.]

3 (Currently amended) A high strength stringed musical instrument neck as recited in claim one wherein [The method of claim two is the outer skin truss defined in claim one comprised of at least two layers] the external strengthening

shell is made from a plurality of layers of carbon fiber cloth cast in epoxy resins [installed at] and formed upon a mold and the weave of said cloth is disposed at an angle of 45 ° to the longitudinal axis of said mold to form an external truss structure and having a semi-elliptical cross sectional shape. [structure, whereby opposing physical forces acting on the compression spar and the tension spar create a crush load in the region between the tension spar and the compression spar, these loads are redirected by said skin truss along the length of the 45 ° fibers as forces to oppose the original load placed upon the compression spar]

4. (Currently amended) [The method of claim three is a core] A high strength stringed musical instrument neck comprising the steps of:

providing a structural length of hardwood shaped as the instruments neck; and

providing two graphite strengthening beams; and

machining the length of hard wood to accept the installation of said beams; and

adhesively securing said beams; and

providing an external carbon fiber strengthening [having adequate sheer strength and density to dispose the load from the outer skin truss at the juncture of the compression spar and said] outer shell; and adhesively securing said shell to the wood and both beams inclusive; and [ skin and having sufficient strength to withstand the crush loads in the region between the compression spar and the tension spar.]

providing a stainless steel two way truss rod assembly within the wood core, and

providing a fingerboard and adhesively securing it to the neck.

(These are the currently amended claims )

10/086.226

March 18, 2004